

1 **ABSTRACT**

2 A method of using Raman imaging microscopy to evaluate drug actions in  
3 living cells is disclosed. Specifically the invention describes the methods of using  
4 Raman imaging microscopy to detect drug uptake, distribution, binding, and  
5 metabolism in a single cell, and to study drug pharmacokinetics at the cellular level.

6 The method involves measuring the Raman image of both the drug and the cell.  
7 Control images and post-treatment images of the cell were studied. Ratio images  
8 were calculated and the requisite information was obtained from a study of the  
9 intensity of the bright areas in the ratio images.